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Inventor(s):	D. Amnon SILVERSTEIN et al.	**Confirmation No.:**	6116
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Title: SYSTEM AND METHOD FOR BLENDING IMAGES INTO A SINGLE IMAGE

MAIL STOP APPEAL BRIEF - PATENTS
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APPEAL BRIEF - PATENTS

Sir:

This is an Appeal Brief in connection with the decisions of the Examiner in a Final Office Action mailed September 17, 2009, and in connection with the Notice of Appeal filed on December 17, 2009.

It is respectfully submitted that the present application has been at least twice rejected.

Each of the topics required in an Appeal Brief and a Table of Contents are presented herewith and labeled appropriately.

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(1) Real Party in Interest

The real party in interest is Hewlett-Packard Development Company, L.P.

(2) Related Appeals and Interferences

The Appellant is unaware of any appeals or interferences related to this case.

(3) Status of Claims

Claims 3, 4, 8, 13, 19, 20, 30, 32 and 34 have been canceled.

Claims 1, 2, 5-7, 9-12, 14-18, 21-29, 31, 33 and 35-49 are pending in the present application and stand rejected.

Pursuant to 37 C.F.R. § 41.37, the Appellant hereby appeals the Examiner's decision finally rejecting all of the pending claims to the Board of Patent Appeals and Interferences. Therefore, claims 1, 2, 5-7, 9-12, 14-18, 21-29, 31, 33 and 35-49 of this application are appealed.

(4) Status of Amendments

No amendment was filed subsequent to the Final Office Action dated September 17, 2009.

A copy of the claims at issue on appeal is attached as the Claims Appendix.

(5) Summary of Claimed Subject Matter

Claims 1, 16, 21, 26, 27 and 33 are the independent claims in this appeal. It should be understood that the citations below to the original disclosure as providing support for the claimed features are merely exemplary and do not limit the claim features to only those citations.

1. (Previously Presented) A method for blending images into a composite image, comprising:

selecting two images having overlapping content (See *specification*, paragraph [0005], step (200) in Figure 2.);

dividing the two images into strips (See *specification*, paragraph [0005], step (202) in Figure 2.);

selecting a strip in each of the two images where the two images overlap each other (See *specification*, paragraph [0005], step (204) in Figure 2.);

determining differences between the overlapping strips (See *specification*, paragraph [0005], step (206) in Figure 2.);

determining a minimized line through the overlapping strips where the differences between the overlapping strips are minimized (See *specification*, paragraph [0005], step (208) in Figure 2.); and

blending the two images together along the minimized line to create a composite image (See *specification*, paragraph [0005], step (210) in Figure 2.).

16. (Previously Presented) A method for blending two images into a composite image, comprising:

dividing two images into strips along a common plane (See *specification*, paragraph [0005], step (202) in Figure 2.);

selecting a strip in each image where the two images overlap (See *specification*, paragraph [0005], step (202) in Figure 2.), wherein the selecting comprises selecting the overlapping strips which have reduced error between the overlapping strips compared with non-selected overlapping strips of the two images (See *specification*, paragraph [0039].);

determining a minimized line through the selected overlapping strips where differences between the selected overlapping strips are minimized (See *specification*, paragraph [0006], step (208) in Figure 2.);

blending the two images along the minimized line to create a composite image (See *specification*, paragraph [0006], step (210) in Figure 2); and

warping the composite image to minimize blurring along the minimized line (See *specification*, paragraph [0006].).

21. (Previously Presented) A computer-based system for blending images into a composite image (See *specification*, paragraph [0022], Figure 1), comprising:

a computer (See *specification*, paragraph [0005], 100 in Figure 1) configured to :

divide two images having overlapping content into strips along a common plane (See *specification*, paragraph [0038], step (202) in Figure 2) wherein each strip is a long and narrow piece of the image having one dimension which is greater than another dimension of the respective strip (See Figure 4);

select a strip of uniform width in each of the two images where the two images overlap each other (See *specification*, paragraph [0038]);

determine pixel difference values between the overlapping strips (See *specification*, paragraph [0007]);

determine a minimized line through the overlapping strips where a sum of the pixel difference values between the overlapping strips is minimized (See *specification*, paragraph [0007]); and

blend the two images together along the minimized line to create a composite image (See *specification*, paragraph [0007]).

26. (Previously Presented) A system for blending images into a composite image, comprising:

means for dividing two images having overlapping content into strips along a common plane (See *specification*, paragraph [0008]) in at least one region of overlap wherein each strip is a long and narrow piece of the image having one dimension which is greater than another dimension of the respective strip (See Figure 4);

means for calculating difference values between image data content of respective pixels of the two images in corresponding strips of uniform length in the at least one region of overlap;

means for determining a cut line through the two images where the difference values are minimized (See *specification*, paragraph [0008]); and

means for blending the two images along the cut line to create a composite image (See *specification*, paragraph [0008]).

27. (Previously Presented) A system for blending images into a composite image, comprising:

a first computing module dividing two images having overlapping content into strips along a common plane in at least one region of overlap (See *specification*, paragraph [0009]);

a second computing module calculating difference values between pixels of the two images in the at least one region of overlap, wherein the difference values individually correspond to a difference of image data content between a pair of corresponding pixels of the two images (See *specification*, paragraph [0009]);

a third computing module determining a cut line through the two images where the difference values are minimized (See *specification*, paragraph [0009]); and

a fourth computing module blending the two images along the cut line to create a composite image (See *specification*, paragraph [0009]).

33. (Previously Presented) A computer readable medium storing software for blending images into a composite image (See *specification*, paragraph [0010]), wherein the software is provided for:

selecting two images having overlapping content (See *specification*, paragraph [0010]);

dividing the two images into strips along a common plane where the two images overlap each other (See *specification*, paragraph [0010]);

selecting a strip in each of the two images (See *specification*, paragraph [0010]);

determining the differences between the overlapping strips (See *specification*, paragraph [0010]);

determining a minimized line through the overlapping strips where the differences between the overlapping strips are minimized (See *specification*, paragraph [0010]); and

blending the two images together along the minimized line to create a composite image (See *specification*, paragraph [0010]).

(6) Grounds of Rejection to be Reviewed on Appeal

A. Whether claims 1, 9-12, 16, 21, 23-27, 29, 33, 36, 39 and 40 were properly rejected under 35 U.S.C. §112, second paragraph.

B. Whether claims 1, 2, 5, 6, 33 and 38 were properly rejected under 35 U.S.C. §103 (a) as being unpatentable over U.S. Patent Application Publication No. 2004/0057633 to Mai et al. (hereinafter "Mai") in view of U.S. Patent Application Publication No. 2003/0235344 to Kang et al. (hereinafter "Kang").

C. Whether claims 21 and 43 were properly rejected under 35 U.S.C. §103 (a) as being unpatentable over Mai in view of Kang, and further in view of U.S. Patent No. 6,813,391 to Uyttendaele et al. (hereinafter "Uyttendaele").

D. Whether claims 22, 26-28, 31 and 41 were properly rejected under 35 U.S.C. §103 (a) as being unpatentable over Mai in view of Kang, and further in view of Uyttendaele and U.S. Patent No. 6,411,742 to Peterson (hereinafter "Peterson").

E. Whether claims 7, 16, 17 and 35 were properly rejected under 35 U.S.C. §103 (a) as being unpatentable over Mai in view of Kang, and further in view of Peterson.

F. Whether claims 14, 15 and 37 were properly rejected under 35 U.S.C. §103 (a) as being unpatentable over Mai in view of Kang, and further in view of U.S. Patent Application Publication No. 20020114536 to Xiong et al. (hereinafter "Xiong").

G. Whether claims 44 and 45 were properly rejected under 35 U.S.C. §103 (a) as being unpatentable over Mai in view of Kang, and further in view of U.S. Patent No. 6,148,118 to Murakami et al. (hereinafter "Murakumi").

H. Whether claim 46 was properly rejected under 35 U.S.C. §103 (a) as being unpatentable over Mai in view of Kang, and further in view of Murakumi and Xiong.

I. Whether claim 18 was properly rejected under 35 U.S.C. §103 (a) as being unpatentable over Mai in view of Kang, and further in view of Peterson and U.S. Patent No. 6,078,701 to Hsu et al. (hereinafter "Hsu").

J. Whether claims 47 and 48 were properly rejected under 35 U.S.C. §103 (a) as being unpatentable over Mai in view of Kang, and further in view of Peterson and Murakami.

K. Whether claim 49 was properly rejected under 35 U.S.C. §103 (a) as being unpatentable over Mai in view of Kang, Peterson, and further in view of Murakami and Xiong.

(7) Arguments

A. The rejection of claims 1, 9-12, 16, 21, 23-27, 29, 33, 36, 39 and 40 under 35 U.S.C. §112 2nd paragraph should be reversed.

Claims 1, 9-12, 16, 21, 23-25, 26, 27, 29, 33, 36, 39, 40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

35 U.S.C. §112, second paragraph, requires that the claims particularly point out and distinctly claim the subject matter that *the patent applicant regards as their invention.* "Distinctly" has been interpreted to mean simply that the claim must have a clear and definite meaning when construed in the light of the complete patent document. *Standard Oil Company v. American Cyanamid Company, 774* F.2d 448, 227 USPQ 293 (Fed. Cir. 1985).

Appellants refer to MPEP §2173.02 (8th ed., rev. 7) which states the essential inquiry pertaining to a §11 2, second paragraph requirement is whether the claims set out and circumscribe a particular subject matter with a reasonable degree of clarity and particularity. Definiteness of claim language must be analyzed, not in a vacuum, but in light of: (A) the content of the particular application disclosure; (B) the teachings of the prior art; and (C) the claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made. In reviewing a claim for compliance with 35 U.S.C. §112, second paragraph, the Examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 U.S.C. § 112, second paragraph by providing clear warning to others as to what constitutes infringement of the patent. MPEP § 2173.02 (8th ed., rev. 7). A fundamental principle

contained in 35 U.S.C. 112, second paragraph is that applicants are their own lexicographers and they can define in the claims what they regard as their invention essentially in whatever terms they choose. MPEP §2173.01 (8th ed., rev. 7).

Claim 1 recites determining differences between the overlapping strips of the images. The rejection asserts the term "differences" is vague and indefinite since the applicant has not defined how to determine that a "difference" exists between "two overlapping strips".

Appellants submit that simply because the details of how to calculate the difference between the strips are not recited in claim 1 and the other independent claims, it does not render the claims indefinite. This is an issue of claim scope rather than indefiniteness. Moreover, one of ordinary skill in the art with the opportunity to consider and review the contents of the application disclosure (at least paragraphs 0031-0034) pursuant to the above authority would clearly understand the language of the claims including the terms difference or differences. Thus, the Appellants submit that the claims are clear and definite on their face, and the rejection should be reversed.

B. The rejection of claims 1, 2, 5, 6, 33 and 38 under 35 U.S.C. §103(a) as being unpatentable over Mai in view of Kang should be reversed.

The test for determining if a reference anticipates a claim, for purposes of a rejection under 35 U.S.C. § 102, is whether the reference discloses all the elements of the claimed combination, or the mechanical equivalents thereof functioning in substantially the same way to produce substantially the same results. As noted by the Court of Appeals for the Federal Circuit in *Lindemann Maschinenfabrick GmbH v. American Hoist and*

Derrick Co., 221 USPQ 481, 485 (Fed. Cir. 1984), in evaluating the sufficiency of an anticipation rejection under 35 U.S.C. § 102, the Court stated:

> Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim.

Therefore, if the cited reference does not disclose each and every element of the claimed invention, then the cited reference fails to anticipate the claimed invention and, thus, the claimed invention is distinguishable over the cited reference.

Claims 1, 2, 5, 6, 33, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mai in view of Kang.

Independent claims 1 and 33

Claim 1 recites, "determining differences between the overlapping strips." The rejection alleges this feature is disclosed by Mai in paragraphs 13 and 60-68. In particular, the rejection relies on the correlation matrix shown in paragraph 61 of Mai as the teaching of the claimed differences. Paragraph 62 describes values FR, FG, and FB in the correlation matrix as average intensities in the overlapping area of the reference image. Thus, the values in the matrix are average intensity values for the reference image, rather than values representing differences between the reference image and a secondary image. Thus, Mai fails to teach or suggest determining differences between the overlapping strips. Kang also fails to teach or suggest this feature.

Claim 1 also recites, "determining a minimized line through the overlapping strips where the differences between the overlapping strips are minimized; and blending the two images together along the minimized line to create a single composite image." The rejection asserts determining a minimized line through the overlapping strips where the

differences between the overlapping strips are minimized is disclosed in paragraph 12 of Mai.

Paragraph 12 of Mai describes a process of minimizing perspective imaging effects of elevated features along a seam line. This process is further described with respect to step 1132 in paragraph 98, i.e., elevation guided mosaicing. However, the step 1132 is performed after the seam is generated in step 1122 where the images are previously combined. Thus, paragraph 12 of Mai does not disclose determining a minimized line where the differences are minimized and then blending along the line. Instead, in Mai, the line or seam is already established, such as described in step 1122, and then a process is performed to minimize perspective imaging effects along the seam. At best, paragraph 12 may be considered to describe some form of blending of the images. However, neither paragraph 12 nor any other disclosure of Mai teaches or suggests first selecting a minimized line where the differences are minimized prior to blending along the line. Kang also fails to teach or suggest these features.
Independent claim 33 recites similar features to claim 1 described above, which are not taught or suggested by Mai in view of Kang. Thus, the rejection of claims 1, 2, 5, 6, 33, and 38 under 35 U.S.C. 103(a) as being unpatentable over Mai in view of Kang should be reversed.

C. The rejection of claims 21 and 43 under 35 U.S.C. §103(a) as being unpatentable over Mai in view of Kang, and further in view of Uyttendaele should be reversed..

Claims 21 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mai in view of Kang further in view of Uyttendaele.

Independent claim 21

Independent claim 21 recites,

> determine pixel difference values between the overlapping two strips;
>
> determine a minimized line through the overlapping strips where a sum of the pixel difference values between the overlapping strips is minimized; and
>
> blend the two images together along the minimized line to create a single composite image.

As described above Mai fails to teach or suggest determining pixel difference values between the overlapping two strips. The correlation matrix of Mai does not contain differences between two different strips, but instead contains average intensities for pixels in one strip along an overlapping region. Mai also fails to teach or suggest first selecting a minimized line where the differences are minimized prior to blending along the line. Kang and Uyttendaele also fail to teach or suggest these features. Thus, the rejection of claim 21 should be reversed.

Claim 43 is dependent on claim 1, and thus, the rejection of claim 43 should be reversed at least for the reasons the rejection of claim 1 should be reversed.

D. The rejection of claims 22, 26-28, 31 and 41 under 35 U.S.C. §103(a) as being unpatentable over Mai in view of Kang, and further in view of Uyttendaele, and Peterson should be reversed. ..

Claims 22, 26-28, 31, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mai in view of Kang further in view of Uyttendaele in further view of Peterson.

Independent claims 26 and 27

Independent claim 26 recites,

> means for calculating difference values between image data content of respective pixels of the two images in corresponding strips of uniform length in the at least one region of overlap;
>
> means for determining a cut line through the two images where the difference values are minimized; and
>
> means for blending the two images along the cut line to create a blended single composite image.

Independent claim 27 recites,

> a second computing module calculating difference values between pixels of the two images in the at least one region of overlap, wherein the difference values individually correspond to a difference of image data content between a pair of corresponding pixels of the two images;
>
> a third computing module determining a cut line through the two images where the difference values are minimized; and
>
> a fourth computing module blending the two images along the cut line to create a blended single composite image.

These features are similar to the features of independent claims 1 and 21 described above, which are not taught or suggested by Mai in view of Kang further in view of Uyttendaele. Peterson also fails to teach or suggest these features. Thus, the rejection of claims 26, 27, 28, and 31 should be reversed.

The rejection of dependent claims 22 and 41 should also be reversed at least for the reasons the rejections of independent claims 1 and 21 should be reversed.

E. The rejection of claims 7, 16, 17 and 35 under 35 U.S.C. §103(a) as being unpatentable over Mai in view of Kang, and further in view of Peterson should be reversed. .

Claims 7, 16, 17, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mai in view of Kang further in view of Peterson.

Independent claim 16

Independent claim 16 recites,

> determining a minimized line through the selected overlapping strips where differences between the selected overlapping strips are minimized;
>
> blending the two images along the determined minimized line to create a single composite image; and
>
> warping the composite image to minimize blurring along the blending minimized line.

These features are similar to the features of independent claims 1 and 21 described above, which are not taught or suggested by Mai in view of Kang further in view of Peterson. Thus, the rejection of claims 16 and 17 should be reversed.

The rejection of dependent claims 7 and 35 should also be reversed at least for the reasons the rejections of independent claims 1 and 33 should be reversed.

F. The rejection of claims 14, 15, and 37 under 35 U.S.C. §103(a) as being unpatentable over Mai in view of Kang, and further in view of Xiong should be reversed. .

Claims 14, 15, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mai in view of Kang further in view of Xiong.

The rejection of dependent claims 14, 15, and 37 should also be reversed at least for the reasons the rejection of independent claim 1 should be reversed.

G. The rejection of claims 44 and 45 under 35 U.S.C. §103(a) as being unpatentable over Mai in view of Kang, and further in view of Murakumi should be reversed. .

Claims 44 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mai in view of Kang further in view of Murakami.

The rejection of dependent claims 44 and 45 should also be reversed at least for the reasons the rejection of independent claim 1 should be reversed.

H. The rejection of claim 46 under 35 U.S.C. §103(a) as being unpatentable over Mai in view of Kang, and further in view of Murakumi and Xiong should be reversed. .

Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mai in view of Kang further in view of Murakami in further view of Xiong.

The rejection of dependent claim 46 should also be reversed at least for the reasons the rejection of independent claim 1 should be reversed.

I. The rejection of claim 18 under 35 U.S.C. §103(a) as being unpatentable over Mai in view of Kang, and further in view of Peterson and Hsu should be reversed. ..

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mai in view of Kang further in view of Peterson further in view of Hsu.

The rejection of dependent claim 18 should also be reversed at least for the reasons the rejection of independent claim 16 should be reversed.

J. The rejection of claims 47 and 48 under 35 U.S.C. §103(a) as being unpatentable over Mai in view of Kang, and further in view of Peterson and Murakami should be reversed.

Claims 47 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mai in view of Kang further in view of Peterson further in view of Murakami.

The rejection of dependent claims 47 and 48 should also be reversed at least for the reasons the rejection of independent claim 1 should be reversed.

K. The rejection of claim 49 under 35 U.S.C. §103(a) as being unpatentable over Mai in view of Kang, Peterson, and further in view of Murakami and Xiong should be reversed.

Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mai in view of Kang further in view of Peterson further in view of Murakami further in view of Xiong.

The rejection of dependent claim 49 should also be reversed at least for the reasons the rejection of independent claim 1 should be reversed.

(8) Conclusion

For at least the reasons given above, the rejection of claims 1, 2, 5-7, 9-12, 14-18, 21-29, 31, 33 and 35-49 described above should be reversed and these claims allowed.

Please grant any required extensions of time and charge any fees due in connection with this Appeal Brief to deposit account no. 08-2025.

Respectfully submitted,

Dated: February 17, 2010

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(9) Claim Appendix

1. (Previously Presented) A method for blending images into a composite image, comprising:

selecting two images having overlapping content;

dividing the two images into strips;

selecting a strip in each of the two images where the two images overlap each other;

determining differences between the overlapping strips;

determining a minimized line through the overlapping strips where the differences between the overlapping strips are minimized; and

blending the two images together along the minimized line to create a composite image.

2. (Previously Presented) The method according to claim 1, wherein the selected images belong to a set of images comprising a scene.

Claims 3-4 (Cancelled).

5. (Original) The method according to claim 1, wherein the selected images are divided along a common plane.

6. (Original) The method according to claim 1, wherein the selected images are divided into strips along one of a vertical plane or a horizontal plane.

7. (Original) The method according to claim 1, wherein the two overlapping strips are selected according to a mean squared difference algorithm such that the sum of the mean squared difference values between the two selected strips is minimized.

8. (Cancelled).

9. (Previously Presented) The method according to claim 1, including:

calculating a squared color difference value for each pixel pair between the overlapping strips;

converting the squared color difference values into a gray scale image of the overlapping strips, wherein the brightest pixels in the gray scale image correspond to the pixels of greatest difference between the two overlapping strips;

sorting the gray scale pixels from largest to smallest difference value;

for each sorted gray scale pixel, mapping the gray scale pixel to one of two regions within the overlapping strip according to the adjacency of the gray scale pixel to the one of the two regions;

determining a cut line between the two regions;

cutting each selected image along the cut line within the overlapping strip of each selected image; and

combining the two cut selected images along the cut line to form the composite image.

10. (Original) The method according to claim 9, wherein the cut line is determined between a first region and a second region to which the pixels have been mapped.

11. (Original) The method according to claim 9, wherein the cut line corresponds to the line of best match between the overlapping strips.

12. (Original) The method according to claim 9, wherein at least one of the cut images is warped along the cut line to improve the fit between the two cut images along the cut line.

13. (Cancelled).

14. (Previously Presented) The method according to claim 1, wherein the blending of images is performed iteratively, with the blended composite image being utilized as one of the selected two images to be blended.

15. (Previously Presented) The method according to claim 14, wherein the method of blending is performed iteratively until all images comprising the scene have been blended into a final image of the scene.

16. (Previously Presented) A method for blending two images into a composite image, comprising:

dividing two images into strips along a common plane;

selecting a strip in each image where the two images overlap, wherein the selecting comprises selecting the overlapping strips which have reduced error between the overlapping strips compared with non-selected overlapping strips of the two images;

determining a minimized line through the selected overlapping strips where differences between the selected overlapping strips are minimized;

blending the two images along the minimized line to create a composite image; and

warping the composite image to minimize blurring along the minimized line.

17. (Previously Presented) The method according to claim 16, wherein the minimized line is determined by calculating mean squared difference values for pairs of pixels between the two selected overlapping strips.

18. (Previously Presented) The method according to claim 16, wherein at least one of the images is warped where the differences between the selected overlapping strips along the blending line exceed a predetermined threshold.

Claims 19-20 (Cancelled).

21. (Previously Presented) A computer-based system for blending images into a composite image, comprising:

a computer configured to:

divide two images having overlapping content into strips along a common plane wherein each strip is a long and narrow piece of the image having one dimension which is greater than another dimension of the respective strip;

select a strip of uniform width in each of the two images where the two images overlap each other;

determine pixel difference values between the overlapping strips;

determine a minimized line through the overlapping strips where a sum of the pixel difference values between the overlapping strips is minimized; and

blend the two images together along the minimized line to create a composite image.

22. (Previously Presented) The system according to claim 21, wherein the two overlapping strips are selected according to a mean squared difference algorithm such that the sum of the mean squared difference values between the overlapping strips is minimized.

23. (Previously Presented) The system according to claim 21, wherein the computer is configured to:

calculate a squared color difference value for each pixel pair between the overlapping strips;

convert the squared color difference values into a gray scale image of the overlapping strips, wherein the brightest pixels in the gray scale image correspond to the pixels of greatest difference between the two overlapping strips;

sort the gray scale pixels from largest to smallest difference value;

for each sorted gray scale pixel, map the gray scale pixel to one of two regions within the overlapping strip according to the adjacency of the sort gray scale pixel to the one of the two regions;

determine a cut line between the two regions;

cut each image along the cut line of the overlapping strip of each image; and

combine the two cut images along the cut line to form the composite image.

24. (Original) The system according to claim 23, wherein the cut line is determined by calculating mean squared difference values for pairs of pixels between the two selected image strips.

25. (Original) The system according to claim 23, wherein at least one of the images is warped where the differences between the selected strips along the cut line exceed a predetermined threshold.

26. (Previously Presented) A system for blending images into a composite image, comprising:

means for dividing two images having overlapping content into strips along a common plane in at least one region of overlap wherein each strip is a long and narrow piece of the image having one dimension which is greater than another dimension of the respective strip;

means for calculating difference values between image data content of respective pixels of the two images in corresponding strips of uniform length in the at least one region of overlap;

means for determining a cut line through the two images where the difference values are minimized; and

means for blending the two images along the cut line to create a composite image.

27. (Previously Presented) A system for blending images into a composite image, comprising:

a first computing module dividing two images having overlapping content into strips along a common plane in at least one region of overlap;

a second computing module calculating difference values between pixels of the two images in the at least one region of overlap, wherein the difference values individually correspond to a difference of image data content between a pair of corresponding pixels of the two images;

a third computing module determining a cut line through the two images where the difference values are minimized; and

a fourth computing module blending the two images along the cut line to create a composite image.

28. (Previously Presented) The system according to claim 27, including selecting two overlapping strips according to a mean squared difference algorithm such

that the sum of the mean squared difference values between the two overlapping strips is minimized.

29. (Original) The system according to claim 27, including:

a fifth computing module cutting the two images along the cut line; and

a sixth computing module joining the cut images together to create the single image.

30. (Cancelled).

31. (Previously Presented) The system according to claim 27, wherein the blending of images is performed iteratively, with the composite image being utilized as one of the two images to be blended.

32. (Cancelled).

33. (Previously Presented) A computer readable medium storing software for blending images into a composite image, wherein the software is provided for:

selecting two images having overlapping content;

dividing the two images into strips along a common plane where the two images overlap each other;

selecting a strip in each of the two images;

determining the differences between the overlapping strips;

determining a minimized line through the overlapping strips where the differences between the overlapping strips are minimized; and

blending the two images together along the minimized line to create a composite image.

34. (Cancelled).

35. (Previously Presented) The software according to claim 33, wherein the two overlapping strips are selected according to a mean squared difference algorithm such

that the sum of the mean squared difference values between the overlapping strips is minimized.

36. (Previously Presented) The software according to claim 33, wherein the software is provided for:

calculating a difference value for each pixel pair between the two overlapping strips;

converting the calculated difference values into a gray scale image of the overlapping strips, wherein the brightest pixels in the gray scale image correspond to the pixels of greatest difference between the two overlapping strips;

sorting the gray scale pixels from largest to smallest difference value;

for each sorted gray scale pixel, mapping the gray scale pixel to a first region or a second region within the overlapping strip according to the adjacency of the gray scale pixel to the first region or the second region;

determining a cut line within the overlapping strips between the first mapped region and the second mapped region;

cutting each selected image along the cut line of the overlapping strip of each selected image; and

combining the two cut selected images along the cut line to form the composite image.

37. (Previously Presented) The method according to claim 1, wherein the selecting comprises selecting the strips of the two images which provide reduced error between the overlapping strips compared with non-selected strips of the two images.

38. (Previously Presented) The method according to claim 1, wherein the determining differences comprises determining differences between image data content of the overlapping strips.

39. (Previously Presented) The method according to claim 38 wherein the determining differences between image data content comprises determining differences between the image data content of one pixel of one of the overlapping strips and one pixel

of another of the overlapping strips and wherein the one pixels of the one and the another of the overlapping strips both correspond to the same subject present in the two images.

40. (Currently Amended) The method according to claim 38 wherein the determining differences comprises determining differences between the image data content comprising color space content of the overlapping strips.

41. (Previously Presented) The system according to claim 27, wherein the pairs of the pixels individually correspond to the same subject present in the two images.

42. (Previously Presented) The method according to claim 1, wherein the selecting a strip in each of the two images comprises selecting the strips in the two images which comprise the same content of a scene present in the two images.

43. (Previously Presented) The software according to claim 33, wherein the selecting a strip in each of the two images comprises selecting the strips in the two images which comprise the same content of a scene present in the two images.

44. (Previously Presented) The method according to claim 1, wherein the selectings, dividing, determinings and blending comprise selectings, dividing, determinings and blending using processing circuitry.

45. (Previously Presented) The method according to claim 1, further comprising storing the composite image.

46. (Previously Presented) The method according to claim 45, further comprising displaying the composite image.

47. (Previously Presented) The method according to claim 16, wherein the dividing, selecting, determining, blending and warping comprise dividing, selecting, determining, blending and warping using processing circuitry.

48. (Previously Presented) The method according to claim 16, further comprising storing the composite image.

49. (Previously Presented) The method according to claim 48, further comprising displaying the composite image.

(10) Evidence Appendix

None.

(11) Related Proceedings Appendix

None.